

REMARKS

This Amendment, submitted in reply to the Office Action dated June 30, 2010, is believed to be fully responsive to each point of rejection raised therein. Accordingly, favorable reconsideration on the merits is respectfully requested.

Claims 1-28 are all the claims pending in the application. Claims 1, 6, 11 and 19 have been amended for purposes of clarification. Applicant submits that no new matter has been added.

I. Rejection of claims 1, 3-6, 8-11, 13, 17-19, 21, and 25-28 under 35 U.S.C. § 103

Claims 1, 3-6, 8-11, 13, 17-19, 21, and 25-28 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Liu et al. (USP 7,184,421 B1) in view of Flammer, III (US 5,488,608) and further in view of Engel et al. (US 6,115,393).

Claim 1

Claim 1 recites:

A system for reliably broadcasting a data packet under an ad-hoc network environment, the system comprising:

a comparing unit which compares a first relay node sequence number with a second relay node sequence number,

wherein the first relay node sequence number is contained in a management packet, the management packet is transmitted from a predetermined neighboring node to at least one node which receives the first relay node sequence number,

wherein the at least one node transmits the data packet to the predetermined neighboring node, and

wherein the second relay node sequence number is stored in a neighbor table of the at least one node;

a memory unit which stores information of the data packet before the data packet is transmitted to the predetermined neighboring node, wherein the information of the data packet comprises the second relay node sequence number; and

a control unit which determines whether or not the data packet is retransmitted to the predetermined neighboring node by the at least one node according to a result of the comparison,

wherein the comparing is performed in the at least one node transmitting the data packet.

The Examiner asserts that Liu teaches the claimed “control unit which determines whether or not the data packet is retransmitted to the predetermined neighboring node by the at least one node according to a result of the comparison.” See page 3 of Office Action. The Examiner asserts that as disclosed in Fig. 2B of Liu, a node uses a controlled-flood technique to dynamically determine whether it should rebroadcast a flooded message based upon the present state, citing col. 5, lines 49-59 in support.

Liu discloses that to route multicast traffic, a CFM communication node uses a controlled-flood technique to dynamically determine whether it should rebroadcast a flooded message based upon the present state of internally maintained network topology information. For unicast traffic, autonomous CFM nodes make intelligent routing decisions based upon a tiered hierarchy of locally maintained network topology information. If an individual node is unable to locate a path to a designated destination based upon its locally maintained information, the message can be routed within a minimum number of hops to a node that can.

However, contrary to the Examiner's assertions, Liu does not teach or suggest the claimed control unit because there is no control unit in Liu which determines whether or not the data packet is retransmitted to the predetermined neighboring node by the at least one node according to a result of the comparison. Specifically, a data packet is not retransmitted to a predetermined neighboring node, let alone, that the data is retransmitted to the predetermined neighboring node according to a result of the comparison.

As conceded by the Examiner, there is no teaching or suggestion in Liu of the claimed comparison, therefore, Liu does not teach determining whether or not the data packet is retransmitted to the predetermined neighboring node by the at least one node according to a result of the comparison. Further, Liu discloses that it is determined whether to rebroadcast a flooded message based upon the present state of internally maintained network topology information and not according to a result of the comparison.

The Examiner states on pages 9 and 10 of the Office Action that Liu does not teach "a memory unit which stores information of the data packet before the data packet is transmitted to the predetermined neighboring node, wherein the information of the data packet comprises the second relay node sequence number," and cites Flammer, III to cure the deficiency. Specifically, the Examiner reasons that Fig. 1 of Flammer, III discloses that node W stores that information in a routing table and before transmitting the packet checks its routing table, citing col. 3, lines 46-67 and col. 4, lines 1-6 in support.

Flammer, III discloses data transmission between a source node and a destination node. If node W wishes to transmit a packet of information to node O, node W will prepare the packet

of data, along with a header that identifies node W as the source and node O as the destination. Node W will then check its routing table to see if there is an entry there for node O. Once node W has determined that a neighboring node is available for relaying a packet to node O, node W will then send the data packet to the selected node along with a header identifying the source and destination of the packet and identifying itself as the transmitter. Once node W determines that node Y is the relay node it will transmit to in order to get a packet to ultimate destination O, node W stores that information in a routing table. The next time node W wishes to transmit a packet to node O, it checks its routing table, finds an entry for O, and immediately transmits the packet to node Y without going through the process of making a routing decision.

Therefore, contrary to the Examiner's assertions, there is no teaching or suggestion of a memory unit which stores information of the data packet before the data packet is transmitted to the predetermined neighboring node or that the information of the data packet comprises the second relay node sequence number. Specifically, there is no teaching or suggestion of a second relay node sequence number in Flammer, III, therefore, Flammer, III does not teach or suggest the information of the data packet comprises the second relay node sequence number.

The Examiner concedes that Liu and Flammer, III do not teach the claimed comparing unit, and cites Engel, col. 23, line 67 to column 24, lines 1-11, to cure the deficiency. See page 13 of Office Action. Further, on page 23 of the Office Action in response to Applicant's remarks, the Examiner asserts that Engel teaches that a routine searches back through the history and checks whether the same initiator node has sent data twice.

The aspects of Engel cited by the Examiner describe that a history routine is called to check back through the history to determine whether data transmissions have been repeated. In the case of retransmissions, the routine calls a Look_for_Retransmission routine 250 which searches back through the history (step 252) and checks whether the same initiator node has sent data twice (step 254). It detects this by comparing **the current sequence number of the packet as provided by the RTP with the sequence numbers of data packets that were previously sent as reported in the history table**. If a retransmission is spotted, the retransmission counter in the dialog statistics data structure of STATS is incremented (step 256). If the sequence number is not found within the history table, indicating that the received packet does not represent a retransmission, the retransmission counter is not incremented (step 258).

Therefore, Engel discloses determining whether data transmissions have been repeated by comparing a **current sequence number of the packet as provided by the RTP with the sequence numbers of data packets that were previously sent as reported in the history table**. However, contrary to the Examiner's assertions, there is no teaching or suggestion that the first relay node sequence number is contained in a management packet transmitted from a predetermined neighboring node, or that the first relay node sequence number contained in a management packet transmitted from a predetermined neighboring node is received by at least one node which transmits the data packet to the predetermined neighboring node.

Specifically, Engel does not teach or suggest the interrelationship between "the predetermined neighboring node" which transmits the management packed with the first relay node sequence number and "the at least one node" which receives the first relay node sequence

number, or that the second relay node sequence number is stored in a neighbor table of the at least one node. As discussed above, Engel merely discloses comparing whether the same initiator node has sent data twice.

For at least the above reasons, claim 1 and its dependent claims 2-5 and 28 should be deemed allowable.

To the extent independent claims 6, 11, and 19 recite similar subject matter, claims 6, 11 and 19 and their respective dependent claims 7-10, 12-8, and 20-27 should be deemed allowable for at least the same reasons.

II. Rejection of claims 2, 7, 12 and 20 under 35 U.S.C. § 103

Claims 2, 7, 12 and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Liu et al. (7,184,421 B1) in view of Flammer, III (US 5,488,608) and further in view of Engel et al (US 6,115,393) as applied to claims 1, 6, 11 and 19 above, and further in view of Ogier (US 7,031,288 B2).

Claims 2, 7, 12 and 20 should be deemed allowable by virtue of their respective dependency to independent claims 1, 6, 11 and 19 for at least the reasons set forth above. Moreover, Ogier does not cure the deficiencies of Liu, Flammer, III and Engel.

III. Rejection of claims 14-16 and 22-24 under 35 U.S.C. § 103

Claims 14-16 and 22-24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Liu et al (USP 7,184,421 B1) in view of Flammer, III (US 5,488,608) and further in view of

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Engel et al. (US 6,115,393) as applied to claims 11, 15, 19 and 23 above, in further view of Riihinens et al. (USP 6,697,331 B1) and Zhu et al. (USP 5,768,527).

Claims 14-16 and 22-24 should be deemed allowable by virtue of their respective dependency to independent claims 11 and 19 for at least the reasons set forth above. Moreover, Riihinens and Zhu do not cure the deficiencies of Liu, Flammer, III, and Engel.

IV. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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